No. 91-860

In the Supreme Court of the United States

OCTOBER TERM, 1991

UNITED STATES DEPARTMENT OF COMMERCE,
ET AL., APPELLANTS

v.

STATE OF MONTANA, ET AL.

*ON APPEAL FROM THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MONTANA*

JOINT APPENDIX
Volume II
(Exhibits)

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(EXHIBITS)

EDITOR'S NOTE

THE FOLLOWING PAGES WERE POOR HARD COPY AT THE TIME OF FILMING. IF AND WHEN A BETTER COPY CAN BE OBTAINED, A NEW FICHE WILL BE ISSUED.

DIANNA M. HILL AFFIDAVIT EXHIBITS

(1)

U.S. DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS

Counting for Representation: The Census and the Constitution*

People counting people

Counting people is an old American practice dating from colonial days. The need for a census of the new United States arose soon after the 13 Colonies broke their ties with Great Britain. The Revolutionary War (1775-83) costs had been high, and the new Nation had to find ways to pay the debt; one way was to divide it equally among the people. Another reason for a census was to establish a truly representative government to sit in the two Houses of Congress. While each State, regardless of size, would have two Senators in the Senate, Members of the House of Representatives would be apportioned—divided up—among the States according to their population. The only way to find out how many people there were was to count them, so for the first time in history, a nation decided to make a census part of its constitution. As adopted in 1787, the U.S. Constitution included these words in Article I, Section 2:

> Representatives and direct Taxes shall be apportioned among the several States which may be included within this Union, according to their respective Numbers. . . . The actual Enumeration shall be made within three Years after the first Meeting of the Congress of the United States, and within every subsequent Term of ten Years, in such Manner as they shall by Law direct.

When they wrote the Constitution, the Founding Fathers tried to find a proper balance in the way the

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* Illustrations and Figure 3 omitted.

country was to be run. By counting people for both taxes and representation at the same time, they believed the census would be both accurate and fair. Had the census been only for tax purposes, the count probably would have been too low; if only for representation, each State would want as many Members in the House as possible and might report more people than it actually had. Counting for taxation, nevertheless, never did follow from the constitutional directive. On the other hand, the constitutional order—to apportion (or reapportion) representatives fairly among the States by a count of the population at least every 10 years—has been followed since 1790 and is the origin of today's decennial census. Based on the 1790 census, the original number of 65 House Members grew to 106, who represented a population of almost 4 million. When the House reached its present size of 435 in 1911, it represented 92 million people—the number from the census taken in 1910. The 1980 census counted over 226 million people for the same size House.

Ever since 1913, the Congress has delegated the authority to conduct the census to the Secretary of Commerce, and has permitted the Secretary to further delegate this authority to the Bureau of the Census. The Secretary must report counts for each State to the President within 9 months from Census Day (for most of this century, this has been April 1) of the year ending in "0." Within one week of the opening of the next session of the Congress, the President must send to the Clerk of the House of Representatives the census count for each State and the number of Representatives to which each State is entitled, following the method of apportionment Congress chose. Within 15 days, the Clerk of the House then notifies the Governor of each State how many Representatives that State will be entitled to in the next Congress.

Originally, Article I, Section 2 based apportionment on "the whole Number of free Persons, including those bound to Service for a Term of Years, and excluding Indians not taxed, three-fifths of all other Persons [Editor's note: slaves]." The practice of "Service for a Term of Years" soon died out. All American Indians have been considered to be taxed since the 1940's, and the Civil War of 1861-65 ended slavery and the three-fifths rule. The Constitution (Amendment 14) now refers to the "whole number" of persons, which the Census Bureau has taken to mean that all those persons who are residents of the United States should be included. Who are the exceptions and what are the special situations? Here are the Bureau of the Census's rules about them:

Two groups of people are specifically excluded from the census count. Persons living on the grounds of an embassy, ministry, legation, chancellery, or consulate are considered to be living on foreign soil, and therefore not residents of the United States. Also, citizens of foreign countries temporarily visiting or traveling in the United States are not counted in the census because they have not established a residence. On the other hand, Americans who are temporarily abroad on vacations, business trips, and the like are counted at their usual residence in the United States. Those Americans, however, who are overseas for an extended period (in the Armed Forces, working at civilian jobs, studying in foreign universities, etc.) generally are not included, because they are considered to have a "usual residence" outside of the United States.

Should undocumented or illegal aliens be included in the count for apportionment?

Congress debated this question on a number of occasions. The results support the statement of James Madison that the apportionment is to be "founded on the aggregate

number of inhabitants" of each State. To the Census Bureau, that means all people here as residents, whether or not they are citizens or even not legally admitted as immigrants. In the 1970's, it became apparent that large numbers of persons were illegally entering the United States. Believing that these numbers might affect the apportionment of the U.S. Congress, the Federation for American Immigration Reform (FAIR) brought suit in 1979 to make the Census Bureau keep illegal aliens out of the apportionment count. The suit was decided in favor of the Census Bureau, but on procedural grounds. Even so, the United States District Court did address the real issue of whether or not illegal aliens should be included in the census. The court noted that "the Constitution requires the counting of the whole number of persons" and that illegal aliens "are clearly persons." How many undocumented aliens were counted in the census? Although the census does not ask anyone whether he or she has the proper papers to be in this country, a reasonable estimate of these persons included in the 1980 census is about 2 million, or less than 1 percent of the U.S. population.

Where should people be counted?

As important as who should be included in the count is the question of where the counted persons should be listed as living. The basic rule laid down in the first census act of March 1, 1790 states:

. . . every person whose usual place of abode shall be in any family . . . shall be returned as of such family; and the name of every person, who shall be an inhabitant of any district, but without a settled place of residence, shall be inserted . . . in that division where he or she shall be. . . , and every person occasionally absent at the time of the enumeration, as belonging to that place in which he usually resides in the United States.

From that act came the term "usual residence" and the idea of counting persons where they live and sleep most of the time. That place is not necessarily the same as the person's legal residence, voting residence, or the place where he or she can be found on Census Day. There are rules to determine where a person should be counted for certain groups of people, among them members of the Armed Forces (counted as residents of the area where they are stationed), college students (counted where they are living while at college, either in a dormitory or in local housing), and persons in institutions (at the institution if long-term, or at home, generally, if short-term).

But what is the Census Bureau's role—officially?

An agency in the Department of Commerce, the Bureau of the Census conducts the census of population and housing in years ending in "0." Title 13 of the United States Code authorizes the census, outlines its timing and scope (and the scope of other Bureau censuses and surveys), requires the public to answer the questions and makes all the information confidential, and sets the penalties for disclosing this information.

The role of the Bureau of the Census in the apportionment process has two parts:

—To carry out the census itself—counting the Nation's people and recording information about them, such as age, race, and so on.

—To unofficially calculate the apportionment by determining the number of Representatives for each State based upon the results of that census.

How is apportionment calculated?

Three factors are needed to calculate apportionment:

—the population base
—the size of the body (the House of Representatives) to be divided
—a method to use for the calculation

The first two are fairly straightforward. The census obtains a count for each of the 50 States in accordance with the enumeration and residence rules discussed above, and the Congress determines the current size of the House of Representatives. From 1800 to 1840, the number of seats in the House increased as the population grew and new States were admitted to the Union. In 1850, for the first time, the number of seats was fixed before apportionment. The current House size, 435 members, has not been changed since the apportionment following the 1910 census, except for a temporary increase when Alaska and Hawaii became States in 1959.

How does one choose a method to calculate apportionment?

You might think, it's easy—once you know the number of people in the country and in a State and the number of representatives in the House. Don't you just divide the number in the country by the number in the State and give each of the 50 States that same share of the votes in the House? But what if there's a fraction left over? Can any State send a third of an elected official to Congress?

Generally, the assignment of seats for whole shares is not a problem, no matter what method is used; the assignment of seats for fractional shares is the issue that presents the problem. The apportionment procedure affects only the assignment of the 51st and successive seats, since the Constitution provides that each State must have at least one representative.

Finding a method that would solve the fraction problem adequately was a concern of Congress from 1792 until the

early 1900's, during which time mathematicians, statisticians, and politicians came up with different ways (that had their own problems), some of which were never used. (See fig. 1.)

The 1792 Apportionment Act was known as the Jefferson plan, named for Thomas Jefferson, then Secretary of State in President George Washington's cabinet. This plan gave one Representative for every 33,000 people in each State, the fractions—or remainders—being disregarded. Essentially the same method was used after each of the next four censuses, but with progressively larger numbers to deal with.

In 1840, a change in the method of apportionment resulted from lengthy Senate debates on reapportionment in 1832 led by Daniel Webster of Massachusetts. He maintained that Jefferson's method was unconstitutional because it discriminated against small States by disregarding the fractions. Webster's position was that the Constitution required Congress to apportion Representatives "as near as may be" to the population of each State. Therefore, an additional Member was awarded for a fraction of over one-half. This practice, as Jefferson's had, also resulted in a House of Representatives of varying size, depending upon the ratio chosen and the population of each State. In the Nation's early years, increasing the size of the House of Representatives after each census was not a problem. As new States joined the union, and as the population of existing States grew, more members were added as needed, but it became apparent that continued growth in the size of the House would begin to strain its workings.

Samuel F. Vinton, a Representative from Ohio during the middle 1800's, was responsible fro the method used in 1850. It seemed to be the answer to the problem of reapportionment because it appeared to be the fairest way to distribute a fixed number of seats. The Vinton method

Figure 1. Deciphering the Methods

Five apportionment methods use formulas in which the State's total population (P) is the numerator and the divisor creates a numerical value that determines each State's priority for its next seat. In the divisors below, "n" represents the number of the State's next seat. The different divisors are assigned to achieve different tests.

Here is a summary of the divisor methods, the formulas, and their tests.

Method	Divisor	Test
Equal Proportions (current method)	$\sqrt{n(n-1)}$	Smallest percent difference between number of persons per representative and smallest percent difference between number of representatives per person
Major Fractions	$\dfrac{n-1}{2}$	Smallest absolute difference between number of representatives per person
Harmonic Means	$\dfrac{2(n-1)n}{(n-1)+n}$	Smallest absolute difference between number of person per representative
Smallest Divisors	$n-1$	Smallest absolute "representation surplus"
Greatest Divisors	n	Smallest absolute "representation deficiency"

Source: Adapted from Sam T. Davis, "Reapportionment: Numerical Politics." *American Demographics,* Vol. 3, No. 10 (November 1981), p. 27.

worked this way in 1850: A House size of 233 was selected. The total population was divided by 233 to determine the number by which each State's population would be divided. The resulting "quotas"—each State's exact share in the House—were used to assign the 233 seats. First, each State received the whole number of the quota. The remaining seats needed to make 233 were allocated by giving the States with the largest fractions each a seat until all 233 seats were assigned.

Vinton's method served for several decades. After the census of 1880, however, people noticed that if the size of the House increased from its then current size of 293 to 299, Alabama would not change from its 8-member delegation. But if the House size were to be fixed instead at 300, Alabama would actually lose a member and have only 7. Fortunately for Alabama, the size of the House was set at 332, and Alabama maintained an 8-member delegation. This troublesome characteristic of the Vinton method was named the "Alabama Paradox" (under which a State would be entitled to fewer seats if the size of the House were increased and the population of all State remained constant).

In 1910, Congress adopted a more refined and complex version of the Vinton method, known as Major Fractions. Some call this "Webster's method." Major Fractions, which was also used in 1930, is one of several methods that use a priority list to assign representatives to States. (Congress could not decide on an apportionment plan based on the 1920 census, but later passed a bill that made reapportionment automatic even if no action was taken.) The present method of Equal Proportions, adopted in 1941 (Title 2, Section 2a, United States Code) is another system that uses a priority list. The priority value is calculated by dividing the population of the State by a divisor. (See fig 1.) Each of the priority list methods has a differ-

ent divisor, designed to reach certain objectives. For example, following the 1980 results, each of the 50 States was awarded one seat out of the current 435 total. Then, the 51st seat went to the State that had the highest priority value for its second seat. In computing the apportionment from the 1980 State totals, seat 51 went to California, whose priority value under the method of Equal proportions was 16,736,300. The next seat, number 52, went to New York, with a second-seat priority value of 12,414,877, and Texas received seat number 53, with a priority value of 10,060,986. (See fig. 2.)

Once the number of seats assigned to the individual States is determined, the task of drawing the new congressional districts is generally that of each State legislature. This process of redistricting has required much legislative action.

Redistricting

When setting up or changing the boundaries of congressional or legislative districts, there are two ways to control the districts for political purposes—by geography or by population. Almost from the beginning, election districts began to take on all sorts of strange shapes and population sizes to favor some particular group or party, not always in keeping with the Constitution's principle of equal representation.

How do you tinker with geography?

A practice sometimes followed by some State legislatures when redistricting is called gerrymandering, after Elbridge Gerry, the Governor of Massachusetts in 1812, when Essex County's senatorial election districts were drawn to make sure his party's candidate was elected. The map that resulted looked like a *salamander*. One of

Figure 2.   Apportionment Mini-Guide

How does the method of Equal Proportions work? California receives the 51st seat because it is the most populous State. Whey does California receive the 54th seat (its third) before Pennsylvania receives its second?

The formula is: $\dfrac{P}{\sqrt{n(n-1)}}$

where "P" is the State population and "n" is the number of seats a State would have if it gained a seat. Thus, each State's claim to a seat (the priority value) would be the total State population divided by the geometric means of its current and next seats ($\sqrt{n(n-1)}$).

Listed below are the first 10 seats awarded on the basis of the method of equal proportions in 1980. The list continues in this fashion until the 385 seats (numbers 51 through 435) have been allocated. (Each State got one of the first 50 seats.)

Seat	State	1980 population	Seat number	Multiplier*	Priority value
51	California	23,668,562	2	0.70710678	16,738,200
52	New York	17,557,288	2	0.70710678	12,414,877
53	Texas	14,228,383	2	0.70710678	10,060,986
54	California	23,668,562	3	0.40824829	9,682,650
55	Pennsylvania	11,866,728	2	0.70710678	8,391,044
56	Illinois	11,418,461	2	0.70710678	8,074,071
57	Ohio	10,797,419	2	0.70710678	7,634,928
58	New York	17,557,288	3	0.40824829	7,167,733
59	Florida	9,739,992	2	0.70710678	6,887,214
60	California	23,668,562	4	0.28867513	6,832,525

Note: * The multiplier is merely the reciprocal of the geometric mean

$$\left(\frac{\sqrt{n(n-1)}}{1} \right)$$

Source: Penelope E. Harvison et al. "Drawing the Lines — By the Numbers: The Statistical Foundations of the Electoral Process." *Government Information Quarterly*, Vol. 2, No. 4 (November 1985), p. 395. Statistics are taken from the 1980 Decennial Census.

Gerry's critics called it a *gerrymander* and the name stuck. In 1842, Congress required that congressional districts be contiguous (no separate parts), but some States got around this by connecting the parts with strips of land that might or might not contain people; others created long, narrow districts that wound across a State. In 1872, Congress said that districts had to be compact, but this also was interpreted in different ways.

How about population?

In the history of redistricting, if you wanted to discriminate against certain people because of their race, national origin, beliefs, income, or the way they vote, you made sure any such groups either were divided up among several districts, or that they were outnumbered by the people you wanted to favor. This was done even after 1901, when Congress said that districts not only had to be compact but also approximately equal in population. In any case, all of these provisions were dropped in 1929.

How was representation brought back into constitutional "balance"?

For over 30 years after 1929, some States established new districts with little or no attention to "balance." They simply failed to redistrict despite major population movements or elected "members at large" to avoid redistricting. The result was that a district with a large population would have no more political "clout" than one that had few people: Each district still had only one representative.[1]

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[1] Some examples of great disparities in congressional district population sizes in modern U.S. history include: New York (1930) 776,425 in the largest district and 90,671 in the smallest district; Ohio (1946) 698,650 and 163,561; Illinois (1946) 914,053 and 112,116; Arkansas (1946) 423,152 and 177,476; Texas (1962) 951,527 and 216,371; Michigan (1962) 802,994 and 177,431; Maryland (1962) 711,045 and 243,570; and South Dakota (1962) 497,669 and 182,845.

In a series of decisions beginning in 1962, the U.S. Supreme Court restored the equal-population rule and extended it to State and local legislative districts as well. In the case of *Wesberry v. Sanders* (1964), for example, the Court ruled that "as nearly as practicable, one man's vote in a congressional election is to be worth as much as another's." After the Voting Rights Act was passed in 1964, Federal courts held that using race to discriminate in drawing district boundaries was unconstitutional; in 1986, the U.S. Supreme Court stated that redistricting plans could not be challenged only because the proposed boundaries might discriminate against parts of the total population, such as Blacks or persons of Spanish origin. Thus race *and* population had to be considered in redistricting at any level.

What is the Census Bureau's role in the redistricting process?

When there has been a change in population or its distribution within States, almost all States use census data in altering their congressional and legislative district boundaries.

The States themselves — and not the Census Bureau — set these boundaries. Once they are law, however, the Bureau adds up the decennial census population of each congressional district and publishes the figures for official use.

The States, then, need the census and the Census Bureau's help in determining population counts for small areas. Congress passed legislation in December 1975, Public Law 94-171, which set up a voluntary program between the Bureau and States that wished to receive population tabulations for election precincts and certain other geographic areas. Those responsible for the legislative apportionment or redistricting of each State were to submit to the Secretary of Commerce a plan identifying the geo-

graphic areas for which they wanted specific tabulations of population from the 1980 census. This plan had to be submitted not later than 3 years before the census date, developed in a nonpartisan manner, and meet Census Bureau technical guidelines. In February and March 1981, the Bureau delivered the "Public Law 94-171 Population Counts" on computer tape, microfiche, and paper to 23 participating States and similar data to the other 27 States. In addition to the total population, there were counts of people in five race groups and of Hispanic/Spanish origin. The data covered the major geographic areas recognized in the census — States, counties, county subdivisions, places, census tracts (or block numbering areas), enumeration districts or block groups, census blocks, and election precincts where asked for, together with the numeric code for each area to help with the calculations. These statistics, which anyone could purchase, were for approximately 2.5 million blocks and over 300,000 additional small areas.

For 1990, the Census Bureau plans to block-number the entire country and to have counts for each of 8 to 12 million blocks. By offering State population figures by block as well as voting district, the legislators will be able to be much more flexible in creating redistricting plans to satisfy political considerations and legal guidelines. The 21st Decennial Census will be taken as of April 1, 1990. By April 1, 1991, the Census Bureau will deliver copies of census block maps, the 1990 Public Law 94-171 tape files, and prints of these data to the Governor and legislature of each State.

Much of the success of the 1980 redistricting data program and the 1990 program that follows is the result of a decade-long partnership involving State officials, the National Conference of State Legislatures, and the Census Bureau.

Aside from its direct goals, the program has served as an example of how State and Federal governments can work together to identify and fulfill a critical constitutional need.

What does the future hold for census data and elections?

The relationship between census statistics and representation has become more closely knit in the last two decades, largely because of the redistricting data program. Census Bureau planners are looking to the future and the increasing use of technological developments to meet the time requirements that States have to redraw their districts.

— Duplicating and providing the enormous number of maps for everyone engaged in the redistricting process has been expensive and time-consuming. The automated geographic system the Census Bureau is developing should make it easier and faster to produce maps with voting district boundaries. As States begin to have their own computerized map files, the exchange of current geographic information should be made more convenient.

The Bureau of the Census has recognized that it must be alert to the social and governmental changes that affect the people of the United States and the way in which they are represented. If there are new laws and rules, the Bureau may need to provide the States with more statistics; and as new developments occur in individual States and legislatures, it may need to change its procedures to adapt to new needs. The Census Bureau's connection to representation is a vital part of the constitutional system, and the commitment to work with the individual States in this basic governmental process is most important.

Summary

Given the laws and court decisions that require numbers and information about people, the importance of the decennial census cannot be overstated. The completeness and accuracy of population counts from every section of the country directly affect every citizen's voting strength. States use census information to define their congressional and legislative districts. If there is a disproportionate undercount in any area, the results will correspondingly lessen the effect of the people's vote in that area.

Just as "being counted" spelled equal representation in the Constitution in 1787, it means the same today. At a recent meeting of city officials planning for the 21st census in 1990, a demographer from Anchorage, Alaska, said, "If you're not counted, you're not represented, and if you're not represented, you're not going to have the same clout as others."

Today the census is even more important than it was 200 years ago. Equal representation is for everyone, citizen or not, and everyone must be counted for that. But the census results provide more than just the figures for apportionment. Distributing Federal and State funds among some 39,000 local governments also depends on census data. In addition, social and economic data are used in marketing studies and in locating new businesses; academic research; Federal, State, and local planning (such as for child-care and senior-centers, schools, and transportation); affirmative action programs; and many other activities. Finally, the people of the United States expect information about themselves, their community, State, and Nation. Much of that information is available only through the census, which remains distinctively a cornerstone of the Constitution itself.

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United States Department of Commerce
Bureau of the Census

1990 POPULATION AND NUMBER OF REPRESENTATIVES, BY STATE

NOTE: The population counts set forth herein are subject to possible correction for undercount or overcount. The United States Department of Commerce is considering whether to correct these counts and will publish corrected counts, if any, not later than July 15, 1991.

TOTAL POPULATION[1] 249,632,692

STATE	APPORTIONMENT POPULATION	NUMBER OF REPRESENTATIVES BASED ON THE 1990 CENSUS	CHANGE FROM 1980 APPORTIONMENT
UNITED STATES TOTAL[2]	249,022,783	435	
Alabama	4,040,587	7	
Alaska	551,947	1	
Arizona	3,677,985	6	+1
Arkansas	2,362,239	4	
California	29,839,250	52	+7
Colorado	3,307,912	6	
Connecticut	3,295,669	6	
Delaware	668,696	1	
Florida	13,003,362	23	+4
Georgia	6,508,419	11	+1
Hawaii	1,115,274	2	
Idaho	1,011,986	2	
Illinois	11,466,682	20	−2
Indiana	5,564,228	10	−1
Iowa	2,787,424	5	−1
Kansas	2,485,600	4	−1
Kentucky	3,698,969	6	−1
Louisiana	4,238,216	7	−1
Maine	1,233,223	2	
Maryland	4,798,622	8	
Massachusetts	6,029,051	10	−1
Michigan	9,328,784	16	−2
Minnesota	4,387,029	8	
Mississippi	2,586,443	5	
Missouri	5,137,804	9	
Montana	803,655	1	−1
Nebraska	1,584,617	3	
Nevada	1,206,152	2	
New Hampshire	1,113,915	2	
New Jersey	7,748,634	13	−1
New Mexico	1,521,779	3	
New York	18,044,505	31	−3
North Carolina	6,657,630	12	+1
North Dakota	641,364	1	
Ohio	10,887,325	19	−2
Oklahoma	3,157,604	6	
Oregon	2,853,733	5	
Pennsylvania	11,924,710	21	−2
Rhode Island	1,005,984	2	
South Carolina	3,505,707	6	
South Dakota	699,999	1	
Tennessee	4,896,641	9	
Texas	17,059,805	30	+3
Utah	1,727,784	3	
Vermont	564,964	1	
Virginia	6,216,568	11	+1
Washington	4,887,941	9	+1
West Virginia	1,801,625	3	−1
Wisconsin	4,906,745	9	
Wyoming	455,975	1	

[1] Total population includes enumerations for the resident population as collected in the 21st decennial census under Title 13, United States Code, for the 50 States and the District of Columbia and counts of military and Federal civilian employees and their dependents overseas as reported by various Federal agencies.

[2] Total population, not including the District of Columbia.

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[RESIDENT] POPULATION (1) 249,632,692

STATE	APPORTIONMENT POPULATION	NUMBER OF REPRESENTATIVES BASED ON THE 1990 CENSUS	CHANGE FROM 1980 APPORTIONMENT
UNITED STATES TOTAL(2)	249,022,783	435	
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Alaska	551,947	1	-
Arizona	3,677,985	6	+1
Arkansas	2,362,239	4	-
California	29,839,250	52	+7
Colorado	3,307,912	6	-
Connecticut	3,295,669	6	-
Delaware	668,696	1	-
Florida	13,003,362	23	+4
Georgia	6,508,419	11	+1
Hawaii	1,115,274	2	-
Idaho	1,011,986	2	-
Illinois	11,466,682	20	-2
Indiana	5,564,228	10	-
Iowa	2,787,424	5	-1
Kansas	2,485,600	4	-1
Kentucky	3,698,969	6	-1
Louisiana	4,238,216	7	-
Maine	1,233,223	2	-
Maryland	4,798,622	8	-
Massachusetts	6,029,051	10	-1
Michigan	9,328,784	16	-2
Minnesota	4,387,029	8	-
Mississippi	2,586,443	5	-
Missouri	5,137,804	9	-
Montana	803,655	1	-1
Nebraska	1,584,617	3	-
Nevada	1,206,152	2	-
New Hampshire	1,113,915	2	-
New Jersey	7,748,634	13	-1
New Mexico	1,521,779	3	-
New York	18,044,505	31	-3
North Carolina	6,657,630	12	+1
North Dakota	641,364	1	-
Ohio	10,887,325	19	-2
Oklahoma	3,157,604	6	-
Oregon	2,853,733	5	-
Pennsylvania	11,924,710	21	-2
Rhode Island	1,005,984	2	-
South Carolina	3,505,707	6	-
South Dakota	699,999	1	-
Tennessee	4,896,641	9	-
Texas	17,059,805	30	+3
Utah	1,727,784	3	-
Vermont	564,964	1	-
Virginia	6,216,568	11	+1
Washington	4,887,941	9	+1

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...inia	1,301,525	3
...in	4,906,745	9
...ing	455,975	1

(1) Total population includes enumerations for the resident population as collected in the 21st decennial census under Title 13, United States Code, for the 50 States and the District of Columbia and counts of military and Federal civilian employees and their dependents overseas as reported by various Federal agencies.

(2) Total population, not including the District of Columbia.

EXHIBIT D

1991 PRIORITY ASSIGNMENTS
HILL FORMULA $-$ SQRT$[n(n-1)]$

SEQ	ST	SEAT	PRIORITY
51	CA	2	210995360
52	NY	2	127593919
53	CA	3	121818228
54	TX	2	120631038
55	FL	2	91947655
56	CA	4	86138495
57	PA	2	84320433
58	IL	2	81081686
59	OH	2	76985013
60	NY	3	73666383
61	TX	3	69646362
62	CA	5	66722591
63	MI	2	65964464
64	NJ	2	54791117
65	CA	6	54478768
66	FL	3	53086003
67	NY	4	52089999
68	TX	4	49247415
69	PA	3	48682425
70	NC	2	47076553
71	IL	3	46812533
-72	CA	7	46042962
73	GA	2	46021472
74	OH	3	44447318
75	VA	2	43957774
76	MA	2	42631829
77	NY	5	40348740
78	CA	8	39874375
79	IN	2	39345034
80	TX	5	38146884

1991 PRIORITY ASSIGNMENTS
HILL FORMULA – SQRT[n(n − 1)]

SEQ	ST	SEAT	PRIORITY
81	MI	3	38084601
82	FL	4	375374473
83	MO	2	36329761
84	CA	9	35165893
85	WI	2	34695927
86	TN	2	34624481
87	WA	2	34562962
88	PA	4	34423673
89	MD	2	33931382
90	IL	4	33101460
91	NY	6	32944608
92	NJ	3	31633666
93	CA	10	31453331
94	OH	4	31429000
95	TX	6	31146800
96	MN	2	31020980
97	LA	2	29968713
98	FL	5	29076401
99	AL	2	28726977
100	CA	11	28450609
101	NY	7	27843276
102	NC	3	27179661
103	MI	4	26929880
104	PA	5	26664462
105	GA	3	26570509
106	TX	7	26323851
107	KY	2	26155661
108	AZ	2	26007281
109	CA	12	25971734
110	IL	5	25640280

1991 PRIORITY ASSIGNMENTS
HILL FORMULA – SQRT[n(n − 1)]

SEQ	ST	SEAT	PRIORITY
111	VA	3	25379033
112	SC	2	24774950
113	MA	3	24613498
114	OH	5	24344799
115	NY	8	24112984
116	CA	13	23890520
117	FL	6	23740782
118	CO	2	23390470
119	CT	2	23303899
120	TX	8	22797123
121	IN	3	22715866
122	NJ	4	22368380
123	OK	2	22327632
124	CA	14	22118324
125	PA	6	21771442
126	NY	9	21265653
127	MO	3	20974997
128	IL	6	20935201
129	MI	5	20859795
130	CA	15	20591039
131	OR	2	20178940
132	TX	9	20105173
133	FL	7	20064623
134	WI	3	20031703
135	TN	3	19990453
136	WA	3	19954936
137	OH	6	19877445
138	IA	2	19710064
139	MD	3	19590292
140	CA	16	19261153

EXHIBIT D – Continued

1991 PRIORITY ASSIGNMENTS
HILL FORMULA – SQRT[n(n – 1)]

SEQ	ST	SEAT	PRIORITY
141	NC	4	19218922
142	NY	10	19020578
143	GA	4	18788187
144	PA	7	18400227
145	MS	2	18288914
146	CA	17	18092703
147	TX	10	17982613
148	VA	4	17945686
149	MN	3	17909971
150	IL	7	17693475
151	KS	2	17575846
152	MA	4	17404371
153	FL	8	17376473
154	NJ	5	17326472
155	LA	3	17302444
156	NY	11	17204761
157	CA	18	17057964
158	MI	6	17031951
159	OH	7	16799507
160	AR	2	16703552
161	AL	3	16585528
162	TX	11	16265886
163	CA	19	16135219
164	IN	4	16062543
165	PA	8	15935064
166	NY	12	15705726
167	FL	9	15324609
168	IL	8	15322998
169	CA	20	15307212
170	KY	3	15100978

EXHIBIT D – Continued

1991 PRIORITY ASSIGNMENTS
HILL FORMULA – SQRT[n(n – 1)]

SEQ	ST	SEAT	PRIORITY
171	AZ	3	15015311
172	NC	5	14886913
173	TX	12	14848654
174	MO	4	14831563
175	CA	21	14560063
176	GA	5	14553267
177	OH	8	14548800
178	NY	13	14447166
179	MI	7	14394626
180	SC	3	14303824
181	WI	4	14164553
182	NJ	6	14147005
183	TN	4	14135385
184	WA	4	14110270
185	PA	9	14053406
186	VA	5	13900669
187	CA	22	13882476
188	MD	4	13852429
189	FL	10	13706747
190	TX	13	13658775
191	IL	9	13513614
192	CO	3	13504494
193	MA	5	13481368
194	CT	3	13454512
195	NY	14	13375477
196	CA	23	13265165
197	OK	3	12890864
198	OH	9	12830836
199	WV	2	12739413
200	CA	24	12700428
201	MN	4	12664262

1991 PRIORITY ASSIGNMENTS
HILL FORMULA – SQRT$[n(n-1)]$

SEQ	ST	SEAT	PRIORITY
202	TX	14	12645569
203	PA	10	12569748
204	MI	8	12466112
205	NY	15	12451891
206	IN	5	12441992
207	FL	11	12398219
208	LA	4	12234676
209	UT	2	12217136
210	CA	25	12181823
211	NC	6	12155114
212	IL	10	12086944
213	NJ	7	11956402
214	GA	6	11882693
215	TX	15	11772384
216	AL	4	11727739
217	CA	26	11703917
218	OR	3	11650316
219	NY	16	11647678
220	MO	5	11488479
221	OH	10	11476248
222	IA	3	11379611
223	PA	11	11369765
224	VA	6	11349848
225	FL	12	11317974
226	CA	27	11262099
227	NB	2	11204934
228	TX	16	11012057
229	MA	6	11007491
230	MI	9	10994077
231	WI	5	10971815

1991 PRIORITY ASSIGNMENTS
HILL FORMULA – SQRT$[n(n-1)]$

SEQ	ST	SEAT	PRIORITY
232	TN	5	10949222
233	NY	17	10941088
234	IL	11	10933052
235	WA	5	10929768
236	CA	28	10852430
237	NM	2	10760603
238	MD	5	10730045
239	KY	4	10678004
240	AZ	4	10617428
241	MS	3	10559109
242	CA	29	10471524
243	FL	13	10411022
244	OH	11	10380657
245	PA	12	10379128
246	NJ	8	10354548
247	TX	17	10344026
248	NY	18	10315357
249	NC	7	10272946
250	IN	6	10158844
251	KS	3	10147420
252	CA	30	10116453
253	SC	4	10114331
254	GA	7	10042709
255	IL	12	9980466
256	MI	10	9833402
257	MN	5	9809695
258	CA	31	9784676
259	NY	19	9757351
260	TX	18	9752441
261	AR	3	9643800

1991 PRIORITY ASSIGNMENTS
HILL FORMULA – SQRT[n(n − 1)]

SEQ	ST	SEAT	PRIORITY
262	FL	14	9638733
263	VA	7	9592373
264	CO	4	9549119
265	PA	13	9547409
266	CT	4	9513777
267	LA	5	9476939
268	OH	12	9476200
269	CA	32	9473971
270	MO	6	9380304
271	MA	7	9303028
272	NY	20	9256636
273	TX	19	9224886
274	CA	33	9182394
275	IL	13	9180693
276	NJ	9	9131853
277	OK	4	9115218
278	AL	5	9084268
279	FL	15	8973172
280	WI	6	8958450
281	TN	6	8940002
282	WA	6	8924119
283	CA	34	8908231
284	NC	8	8896632
285	MI	11	8894647
286	PA	14	8839183
287	NY	21	8804817
288	MD	6	8761045
289	TX	20	8751495
290	ME	2	8720204
291	OH	13	8716836

1991 PRIORITY ASSIGNMENTS
HILL FORMULA – SQRT[n(n − 1)]

SEQ	ST	SEAT	PRIORITY
292	GA	8	8697241
293	CA	35	8649966
294	IN	7	8585790
295	NV	2	8528783
296	IL	14	8499670
297	CA	36	8406256
298	NY	22	8395064
299	FL	16	8393634
300	TX	21	8324333
301	VA	8	8307238
302	KY	5	8271146
303	OR	4	8238018
304	PA	15	8228832
305	AZ	5	8224225
306	CA	37	8175904
307	NJ	10	8167777
308	MI	12	8119664
309	OH	14	8070222
310	MA	8	8056658
311	IA	4	8046600
312	NY	23	8021761
313	MN	6	8009583
314	CA	38	7957841
315	TX	22	7936940
316	MO	7	7927804
317	IL	15	7912762
318	HI	2	7886178
319	FL	17	7884446
320	NH	2	7876569
321	NC	9	7846092

EXHIBIT D – Continued

1991 PRIORITY ASSIGNMENTS
HILL FORMULA – SQRT[n(n – 1)]

SEQ	ST	SEAT	PRIORITY
322	SC	5	7834527
323	CA	39	7751108
324	LA	6	7737888
325	PA	16	7697367
326	NY	24	7680251
327	GA	9	7670245
328	TX	23	7584008
329	WI	7	7571272
330	TN	7	7555681
331	CA	40	7554846
332	WA	7	7542257
333	OH	15	7512968
334	MI	13	7469005
335	MS	4	7466418
336	IN	8	7435512
337	FL	18	7433527
338	AL	6	7417274
339	MD	7	7404435
340	IL	16	7401711
341	CO	5	7396716
342	NJ	11	7388033
343	CT	5	7369340
344	CA	41	7368278
345	NY	25	7366638
346	WV	3	7355103
347	VA	9	7326296
348	TX	24	7261135
349	PA	17	7230418
350	CA	42	7190703
351	KS	4	7175309

EXHIBIT D – Continued

1991 PRIORITY ASSIGNMENTS
HILL FORMULA – SQRT[n(n – 1)]

SEQ	ST	SEAT	PRIORITY
352	ID	2	7155822
353	RI	2	7113381
354	MA	9	7105305
355	NY	26	7077637
356	OK	5	7060617
357	UT	3	7053567
358	FL	19	7031413
359	OH	16	7027738
360	CA	43	7021486
361	NC	10	7017758
362	TX	25	6964636
363	IL	17	6952697
364	MI	14	6914955
365	MO	8	6865679
366	GA	10	6860476
367	CA	44	6860051
368	AR	4	6819197
369	PA	18	6816903
370	NY	27	6810460
371	MN	7	6769333
372	KY	6	6753363
373	NJ	12	6744320
374	AZ	6	6715051
375	CA	45	6705873
376	TX	26	6691406
377	FL	20	6670584
378	OH	17	6601410
379	NY	28	6562723
380	CA	46	6558473
381	IN	9	6557506

EXHIBIT D – Continued

1991 PRIORITY ASSIGNMENTS
          HILL FORMULA – SQRT[n(n – 1)]

SEQ	ST	SEAT	PRIORITY		SEQ	ST	SEAT	PRIORITY
382	WI	8	6556914		412	MO	9	6054960
383	IL	18	6555066		413	FL	22	6049712
384	VA	10	6552838		414	CO	6	6039393
385	TN	8	6543412		415	CA	50	6028439
386	LA	7	6539709		416	MI	16	6021704
387	WA	8	6531786		417	CT	6	6017041
388	NB	3	6469172		418	TX	29	5986818
389	PA	19	6448145		419	VA	11	5927265
390	TX	27	6438809		420	NY	31	5917026
391	MI	15	6437473		421	CA	51	5909052
392	CA	47	6417414		422	OH	19	5887191
393	MD	8	6412428		423	IL	20	5882284
394	SC	6	6396865		424	IN	10	5865211
395	OR	5	6381141		425	MN	8	5862414
396	MA	10	6355178		426	PA	21	5818663
397	NC	11	6347801		427	NC	12	5794723
398	FL	21	6344991		428	CA	52	5794302
399	NY	29	6332380		429	TX	30	5783816
400	CA	48	6282295		430	MS	5	5783462
401	AL	7	6268740		431	WI	9	5782654
402	IA	5	6232870		432	FL	23	5780700
403	OH	18	6223869		433	TN	9	5770747
404	NM	3	6212637		434	OK	6	5764970
405	GA	11	6205534		435	WA	9	5760494
406	TX	28	6204591		436	MA	11	5748475
407	NJ	13	6203872		437	NJ	14	5743670
408	IL	19	6200472		438	NY	32	5729136
409	CA	49	6152750		439	KY	7	5707633
410	NY	30	6117660		440	CA	53	5683924
411	PA	20	6117247		441	MT	2	5682699

EXHIBIT D – Continued

1991 PRIORITY ASSIGNMENTS
HILL FORMULA – SQRT[n(n – 1)]

SEQ	ST	SEAT	PRIORITY
442	AZ	7	5675254
443	GA	12	5664852
444	LA	8	5663554
445	MI	17	5656406
446	MD	9	5655230
447	IL	21	5595168
448	TX	31	5594130
449	OH	20	5585080
450	CA	54	5577674
451	KS	5	5557971
452	NY	33	5552813
453	PA	22	5547877
454	FL	24	5534598
455	CA	55	5475322
456	AL	8	5428888
457	TX	32	5416494
458	MO	10	5415721
459	VA	12	5410828
460	SC	7	5406337
461	NY	34	5387020
462	CA	56	5376660
463	NJ	15	5347066
464	IL	22	5334783
465	MI	18	5332911
466	NC	13	5330370
467	OH	21	5312471
468	FL	25	5308600
469	IN	11	5305283
470	PA	23	5301180
471	AR	5	5282127

EXHIBIT D – Continued

1991 PRIORITY ASSIGNMENTS
HILL FORMULA – SQRT[n(n – 1)]

SEQ	ST	SEAT	PRIORITY
472	CA	57	5281490
473	TX	33	5249792
474	MA	12	5247615
475	NY	35	5230841
476	GA	13	5210906
477	OR	6	5210180
478	WV	4	5200843
479	CA	58	5189631
480	WI	10	5172163
481	MN	9	5170163
482	TN	10	5161513
483	WA	10	5152342
484	CO	7	5104219
485	CA	59	5100913
486	FL	26	5100338
487	IL	23	5097562
488	TX	34	5093046
489	IA	6	5089117
490	CT	7	5085328
491	NY	36	5083463
492	PA	24	5075494
493	OH	22	5065242
494	MD	10	5058192
495	MI	19	5044429
496	ME	3	5034612
497	CA	60	5015177
498	NJ	16	5001722
499	LA	9	4994786
500	UT	4	4987625

EXHIBIT E

1991 PRIORITY ASSIGNMENTS
DEAN FORMULA $- [2(N-1)N]/[(N-1+N]$

EXHIBIT E – Continued

1991 PRIORITY ASSIGNMENTS
DEAN FORMULA $- [2(N-1)N]/[(N-1+N]$

SEQ	ST	SEAT	PRIORITY	SEQ	ST	SEAT	PRIORITY
51	CA	2	22379438	81	MO	2	3853353
52	NY	2	13533379	82	TX	5	3838456
53	TX	2	12794854	83	FL	4	3792647
54	CA	3	12433021	84	WI	2	3680059
55	FL	2	9752522	85	TE	2	3672481
56	PA	2	8943532	86	WA	2	3665956
57	CA	4	8703115	87	MD	2	3598966
58	IL	2	8600012	88	CA	9	3522689
59	OH	2	8165494	89	PA	4	3478040
60	NY	3	7518544	90	IL	4	3344449
61	TX	3	7108252	91	NY	6	3308159
62	MI	2	6996588	92	MN	2	3290272
63	CA	5	6713831	93	NJ	3	3228598
64	NJ	2	5811476	94	LA	2	3178662
65	CA	6	5470529	95	OH	4	3175470
66	FL	3	5418068	96	CA	10	3149699
67	NY	4	5262981	97	TX	6	3127631
68	NC	2	4993222	98	AL	2	3046956
69	TX	4	4975776	99	FL	5	2925756
70	PA	3	4968629	100	CA	11	2848292
71	GA	2	4881314	101	NY	7	2792602
72	IL	3	4777784	102	KY	2	2774227
73	VA	2	4662426	103	NC	3	2774012
74	CA	7	4617979	104	AZ	2	2758489
75	OH	3	4536385	105	MI	4	2720895
76	MA	2	4521788	106	GA	3	2711841
77	IN	2	4173171	107	PA	5	2683060
78	NY	5	4060014	108	TX	7	2640208
79	CA	8	3996328	109	SC	2	2627780
80	MI	3	3886993	110	CA	12	2599632

1991 PRIORITY ASSIGNMENTS
DEAN FORMULA – $[2(N-1)N]/[(N-1+N]$

SEQ	ST	SEAT	PRIORITY
111	VA	3	2590237
112	IL	5	2580003
113	MA	3	2512105
114	CO	2	2480934
115	CT	2	2471752
116	OH	5	2449648
117	NY	8	2416675
118	CA	13	2390966
119	FL	6	2383950
120	OK	2	2368203
121	IN	3	2318428
122	TX	8	2284795
123	NJ	4	2260018
124	CA	14	2213351
125	PA	6	2186197
126	MO	3	2140752
127	OR	2	2140300
128	NY	9	2130254
129	IL	6	2102225
130	MI	5	2098976
131	IA	2	2090568
132	CA	15	2060329
133	WI	3	2044477
134	TE	3	2040267
135	WA	3	2036642
136	TX	9	2014005
137	FL	7	2012425
138	MD	3	1999426
139	OH	6	1996010
140	NC	4	1941809

1991 PRIORITY ASSIGNMENTS
DEAN FORMULA – $[2(N-1)N]/[(N-1+N]$

SEQ	ST	SEAT	PRIORITY
141	MS	2	1939832
142	CA	16	1927118
143	NY	10	1904698
144	GA	4	1898289
145	KS	2	1864200
146	PA	7	1845491
147	MN	3	1827929
148	VA	4	1813166
149	CA	17	1819102
150	TX	10	1800757
151	IL	7	1774606
152	AR	2	1771679
153	LA	3	1765923
154	MA	4	1758473
155	NJ	5	1743443
156	FL	8	1741522
157	NY	11	1722430
158	MI	6	1710277
159	CA	18	1706493
160	AL	3	1692753
161	OH	7	1684943
162	TX	11	1628436
163	IN	4	1622900
164	CA	19	1614111
165	PA	8	1597059
166	NY	12	1572059
167	KY	3	1541237
168	IL	8	1535716
169	FL	9	1535119
170	AZ	3	1532494

EXHIBIT E – Continued

1991 PRIORITY ASSIGNMENTS
DEAN FORMULA – [2(N – 1)N]/[(N – 1 + N]

SEQ	ST	SEAT	PRIORITY
171	CA	20	1531225
172	MG	4	1498526
173	NC	5	1497967
174	TX	12	1486271
175	GA	5	1464394
176	SC	3	1459878
177	OH	8	1458124
178	CA	21	1456440
179	NY	13	1445874
180	MI	7	1443740
181	WI	4	1431134
182	TE	4	1428187
183	WA	4	1425649
184	NJ	6	1420583
185	PA	9	1407778
186	MD	4	1399598
187	VA	5	1398728
188	CA	22	1388623
189	CO	3	1378297
190	CT	3	1373195
191	FL	10	1372577
192	TX	13	1366972
193	MA	5	1356536
194	IL	9	1353706
195	WV	2	1351219
196	NY	14	1338466
197	CA	23	1326844
198	OK	3	1315668
199	UT	2	1295823
200	OH	9	1285309

SEQ	ST	SEAT	PRIORITY
201	MN	4	1279550
202	CA	24	1270330
203	TX	14	1265425
204	PA	10	1258719
205	IN	5	1251951
206	MI	8	1249391
207	NY	15	1245930
208	FL	11	1241230
209	LA	4	1236146
210	NC	6	1220566
211	CA	25	1218436
212	IL	10	1210372
213	NJ	7	1199193
214	GA	6	1193210
215	OR	3	1189055
216	NB	2	1188463
217	AL	4	1184927
218	TX	15	1177939
219	CA	26	1170617
220	NY	16	1165374
221	IA	3	1161427
222	MO	5	1156006
223	OH	10	1149218
224	NM	2	1141334
225	VA	6	1139704
226	PA	11	1138268
227	FL	12	1132869
228	CA	27	1126410
229	MA	6	1105326
230	WI	5	1104018

EXHIBIT E – Continued

1991 PRIORITY ASSIGNMENTS
DEAN FORMULA – $[2(N-1)N]/[(N-1+N)]$

SEQ	ST	SEAT	PRIORITY
231	TX	16	1101779
232	TE	5	1101744
233	MI	9	1101315
234	WA	5	1099787
235	NY	17	1094612
236	IL	11	1094547
237	CA	28	1085422
238	MD	5	1079690
239	KY	4	1078866
240	MS	3	1077685
241	AZ	4	1072746
242	CA	29	1047314
243	FL	13	1041936
244	OH	11	1039245
245	PA	12	1038895
246	NJ	8	1037763
247	KS	3	1035667
248	TX	17	1034878
249	NY	18	1031957
250	NC	6	1030348
251	SC	4	1021915
252	IN	6	1020108
253	CA	30	1011791
254	GA	7	1007255
255	IL	12	998991
256	MN	5	987082
257	MI	10	984705
258	AR	3	984266
259	CA	31	978599
260	NY	19	976092

SEQ	ST	SEAT	PRIORITY
261	TX	18	975642
262	CO	4	964808
263	FL	14	964535
264	VA	7	962088
265	CT	4	961237
266	PA	13	955506
267	LA	5	953599
268	OH	12	948517
269	CA	32	947517
270	MO	6	941931
271	MA	7	933067
272	NY	20	925968
273	ME	2	924917
274	TX	19	922826
275	OK	4	920968
276	IL	13	918805
277	CA	33	918348
278	NJ	9	914769
279	AL	5	914087
280	NV	2	904614
281	WI	6	899570
282	FL	15	897851
283	TE	6	897718
284	WA	6	896123
285	NC	8	891647
286	CA	34	890922
287	MI	11	890475
288	PA	14	884525
289	NY	21	880744
290	MD	6	879747

EXHIBIT E – Continued

1991 PRIORITY ASSIGNMENTS
DEAN FORMULA – $[2(N-1)N]/[(N-1+N]$

SEQ	ST	SEAT	PRIORITY
291	TX	20	875437
292	OH	13	872382
293	GA	8	871663
294	CA	35	865088
295	IN	7	861131
296	IL	14	850551
297	CA	36	840709
298	FL	16	839800
299	NY	22	839733
300	HI	2	836456
301	NH	2	835436
302	TX	21	832681
303	VA	8	832576
304	OR	4	832339
305	KY	5	832268
306	AZ	5	827547
307	PA	15	823373
308	NJ	10	817911
309	CA	37	817667
310	IA	4	812999
311	MI	12	812735
312	OH	14	807576
313	MA	8	807462
314	MN	6	804289
315	NY	23	802374
316	CA	38	795855
317	MO	7	795136
318	TX	22	793909
319	IL	15	791747
320	FL	17	788807

SEQ	ST	SEAT	PRIORITY
321	SC	5	788334
322	NC	9	785970
323	LA	6	777006
324	CA	39	775176
325	PA	16	770138
326	GA	9	768355
327	NY	24	768199
328	WI	7	759377
329	ID	2	758990
330	TX	23	758588
331	TE	7	757813
332	WA	7	756467
333	CA	40	755545
334	RI	2	754488
335	MS	4	754379
336	OH	15	751744
337	WV	3	750677
338	MI	13	747499
339	IN	8	745209
340	AL	6	744811
341	CO	5	744280
342	FL	18	743656
343	MD	7	742644
344	CT	5	741526
345	IL	16	740557
346	NJ	11	739642
347	CA	41	736884
348	NY	25	736817
349	VA	9	733900
350	TX	24	726278

EXHIBIT E – Continued

1991 PRIORITY ASSIGNMENTS
DEAN FORMULA $- [2(N-1)N]/[(N-1+N]$

SEQ	ST	SEAT	PRIORITY
351	KS	4	724967
352	PA	17	723374
353	UT	3	719902
354	CA	42	719122
355	MA	9	711763
356	OK	5	710461
357	NY	26	707900
358	FL	19	703398
359	OH	16	703140
360	NC	10	702750
361	CA	43	702197
362	TX	25	696609
363	IL	17	695589
364	MI	14	691970
365	AR	4	688986
366	MO	8	688099
367	GA	10	687000
368	CA	44	686050
369	PA	18	681969
370	NY	27	681167
371	MN	7	678945
372	KY	6	678144
373	NJ	12	675070
374	AZ	6	674297
375	CA	45	670630
376	TX	26	669269
377	FL	20	667278
378	OH	17	660444
379	NB	3	660257
380	WI	8	657153

EXHIBIT E – Continued

1991 PRIORITY ASSIGNMENTS
DEAN FORMULA $- [2(N-1)N]/[(N-1+N]$

SEQ	ST	SEAT	PRIORITY
381	IN	9	656888
382	NY	28	656381
383	VA	10	656193
384	LA	7	655914
385	CA	46	655887
386	TE	8	655800
387	IL	18	655774
388	WA	8	654635
389	PA	19	645050
390	MI	15	644130
391	TX	27	643995
392	MD	8	642673
393	SC	6	642346
394	OR	5	642090
395	CA	47	641778
396	MA	10	636400
397	NC	11	635501
398	FL	21	634688
399	NM	3	634075
400	NY	29	633335
401	AL	7	628737
402	CA	48	628264
403	IA	5	627170
404	OH	18	622641
405	GA	11	621258
406	NJ	13	620884
407	TX	28	620562
408	IL	19	620274
409	CA	49	615308
410	PA	20	611926

EXHIBIT E – Continued

1991 PRIORITY ASSIGNMENTS
DEAN FORMULA $-[2(N-1)N]/[(N-1+N]$

SEQ	ST	SEAT	PRIORITY
411	NY	30	611854
412	MO	9	606546
413	CO	6	606451
414	FL	22	605135
415	CT	6	604206
416	CA	50	602875
417	MT	2	602741
418	MI	16	602484
419	TX	29	598774
420	VA	11	593400
421	NY	31	591782
422	CA	51	590934
423	OH	19	588934
424	IL	20	588422
425	MN	8	587549
426	IN	10	587335
427	PA	21	582039
428	MS	5	581950
429	NC	12	580021
430	CA	52	579458
431	WI	9	579269
432	OK	6	578894
433	TX	30	578465
434	FL	23	578213
435	TE	9	578076
436	WA	9	577049
437	MA	11	575500
438	NJ	14	574761
439	NY	32	572986
440	KY	7	572459

EXHIBIT E – Continued

1991 PRIORITY ASSIGNMENTS
DEAN FORMULA $-[2(N-1)N]/[(N-1+N]$

SEQ	ST	SEAT	PRIORITY
441	AZ	7	569212
442	CA	53	568418
443	LA	8	567618
444	GA	12	567021
445	MD	9	566504
446	MI	17	565900
447	IL	21	559683
448	TX	31	559488
449	KS	5	559260
450	OH	20	558692
451	CA	54	557792
452	NY	33	555347
453	PA	22	554938
454	FL	24	553585
455	CA	55	547555
456	AL	8	544099
457	MO	10	542324
458	SC	7	542240
459	TX	32	541718
460	VA	12	541595
461	NY	34	538762
462	CA	56	537688
463	NJ	15	535025
464	IL	22	533623
465	MI	18	533509
466	NC	13	533464
467	AR	5	531504
468	OH	21	531405
469	IN	11	531131
470	FL	25	530971

EXHIBIT E – Continued

1991 PRIORITY ASSIGNMENTS
DEAN FORMULA – [2(N – 1)N]/[(N – 1 + N]

SEQ	ST	SEAT	PRIORITY
471	PA	23	530249
472	CA	57	528170
473	WV	4	525474
474	MA	12	525258
475	TX	33	525041
476	SD	2	524999
477	OR	6	523184
478	NY	35	523139
479	GA	13	521508
480	CA	58	518983
481	WI	10	517934
482	MN	9	517913
483	TE	10	516868
484	WA	10	515949
485	ME	3	513843
486	CO	7	511939
487	IA	6	511028
488	FL	26	519132
489	CA	59	510110
490	CT	7	510044
491	IL	23	509882
492	TX	34	509361
493	NY	36	508397
494	PA	24	507664
495	OH	22	506661
496	MD	10	506521
497	MI	19	504627
498	UT	4	503931
499	NV	3	502563
500	CA	60	501535

EXHIBIT F

1991 PRIORITY ASSIGNMENTS
ADAMS FORMULA – (N – 1)

SEQ	ST	SEAT	PRIORITY
51	CA	2	29839250
52	NY	2	18044505
53	TX	2	17059805
54	CA	3	14919625
55	FL	2	13003362
56	PA	2	11924710
57	IL	2	11466682
58	OH	2	10887325
59	CA	4	9946417
60	MI	2	9328784
61	NY	3	9022252
62	TX	3	8529902
63	NJ	2	7748634
64	CA	5	7459812
65	NC	2	6657630
66	GA	2	6508419
67	FL	3	6501681
68	VA	2	6216568
69	MA	2	6029051
70	NY	4	6014835
71	CA	6	5967850
72	PA	3	5962355
73	IL	3	5733341
74	TX	4	5686602
75	IN	2	5564228
76	OH	3	5443662
77	MO	2	5137804
78	CA	7	4973208
79	WI	2	4906745
80	TE	2	4896641

EXHIBIT F – Continued

1991 PRIORITY ASSIGNMENTS
ADAMS FORMULA – (N – 1)

SEQ	ST	SEAT	PRIORITY
81	WA	2	4887941
82	MD	2	4798622
83	MI	3	4664392
84	NY	5	4511126
85	MN	2	4387029
86	FL	4	4334454
87	TX	5	4264951
88	CA	8	4262750
89	LA	2	4238216
90	AL	2	4062608
91	PA	4	3974903
92	NJ	3	3874317
93	IL	4	3822227
94	CA	9	3729906
95	KY	2	3698969
96	AZ	2	3677985
97	OH	4	3629108
98	NY	6	3608901
99	SC	2	3503707
100	TX	6	3411961
101	NC	3	3328815
102	CA	10	3315472
103	CO	2	3307912
104	CT	2	3295669
105	GA	3	3254210
106	FL	5	3250840
107	OK	2	3157604
108	MI	4	3109595
109	VA	3	3108284
110	MA	3	3014526

SEQ	ST	SEAT	PRIORITY
111	NY	7	3007418
112	CA	11	2983925
113	PA	5	2981178
114	IL	5	2866670
115	OR	2	2853733
116	TX	7	2843301
117	IA	2	2787424
118	IN	3	2782114
119	OH	5	2721831
120	CA	12	2712659
121	FL	6	2600672
122	MS	2	2586443
123	NJ	4	2582878
124	NY	8	2577786
125	MO	3	2568902
126	CA	13	2486604
127	KS	2	2485600
128	WI	3	2453372
129	TE	3	2448320
130	WA	3	2443970
131	TX	8	2437115
132	MD	3	2399311
133	PA	6	2384942
134	AR	2	2362239
135	MI	5	2332196
136	CA	14	2295327
137	IL	6	2293336
138	NY	9	2255563
139	NC	4	2219210
140	MN	3	2193514

1991 PRIORITY ASSIGNMENTS
ADAMS FORMULA—(N−1)

SEQ	ST	SEAT	PRIORITY
141	OH	6	2177465
142	GA	4	2169473
143	FL	7	2167227
144	TX	9	2132476
145	CA	15	2131375
146	LA	3	2119108
147	VA	4	2072189
148	AL	3	2031304
149	MA	4	2009684
150	NY	10	2004945
151	CA	16	1989283
152	PA	7	1987452
153	NJ	5	1937158
154	IL	7	1911114
155	TX	10	1895534
156	MI	6	1865757
157	CA	17	1864953
158	FL	8	1857623
159	IN	4	1854743
160	KY	3	1849484
161	AZ	3	1838992
162	OH	7	1814554
163	NY	11	1804450
164	WV	2	1801625
165	CA	18	1755250
166	SC	3	1751854
167	UT	2	1727764
168	MO	4	1712601
169	TX	11	1705980
170	PA	8	1703530

1991 PRIORITY ASSIGNMENTS
ADAMS FORMULA—(N−1)

SEQ	ST	SEAT	PRIORITY
171	NC	5	1664408
172	CA	19	1657736
173	CO	3	1653956
174	CT	3	1647834
175	NY	12	1640410
176	IL	8	1638097
177	WI	4	1635582
178	TE	4	1632214
179	WA	4	1629314
180	GA	5	1627105
181	FL	9	1625420
182	MD	4	1599541
183	NB	2	1584617
184	OK	3	1578802
185	CA	20	1570487
186	OH	8	1555332
187	MI	7	1554797
188	VA	5	1554142
189	TX	12	1550891
190	NJ	6	1549727
191	NM	2	1521779
192	MA	5	1507263
193	NY	13	1503709
194	CA	21	1491962
195	PA	9	1490589
196	MN	4	1462343
197	FL	10	1444818
198	IL	9	1433335
199	OR	3	1426866
200	TX	13	1421650

EXHIBIT F – Continued

1991 PRIORITY ASSIGNMENTS
ADAMS FORMULA – (N – 1)

SEQ	ST	SEAT	PRIORITY
201	CA	22	1420917
202	LA	4	1412739
203	IA	3	1393712
204	IN	5	1391057
205	NY	14	1388039
206	OH	9	1360916
207	CA	23	1356330
208	AL	4	1354203
209	MI	8	1332683
210	NC	6	1331526
211	PA	10	1324968
212	TX	14	1312293
213	GA	6	1301684
214	FL	11	1300336
215	CA	24	1297359
216	MS	3	1293222
217	NJ	7	1291439
218	NY	15	1288893
219	MO	5	1284451
220	IL	10	1274076
221	VA	6	1243314
222	CA	25	1243302
223	KS	3	1242800
224	ME	2	1233223
225	KY	4	1232990
226	WI	5	1226686
227	AZ	4	1225995
228	TE	5	1224160
229	WA	5	1221985
230	TX	15	1218558

EXHIBIT F – Continued

1991 PRIORITY ASSIGNMENTS
ADAMS FORMULA – (N – 1)

SEQ	ST	SEAT	PRIORITY
231	OH	10	1209703
232	NV	2	1206152
233	MA	6	1205810
234	NY	16	1202967
235	MD	5	1199656
236	CA	26	1193570
237	PA	11	1192471
238	FL	12	1182124
239	AR	3	1181120
240	SC	4	1167902
241	MI	9	1166098
242	CA	27	1147663
243	IL	11	1146668
244	TX	16	1137320
245	NY	17	1127782
246	HI	2	1115274
247	NH	2	1113915
248	IN	6	1112846
249	NC	7	1109605
250	NJ	8	1106948
251	CA	28	1105157
252	CO	4	1102637
253	CT	4	1098556
254	MN	5	1096757
255	OH	11	1088732
256	GA	7	1084736
257	PA	12	1084065
258	FL	13	1083614
259	TX	17	1066238
260	CA	29	1065688

EXHIBIT F – Continued

1991 PRIORITY ASSIGNMENTS
ADAMS FORMULA – (N – 1)

SEQ	ST	SEAT	PRIORITY
261	NY	18	1061441
262	LA	5	1059554
263	OK	4	1052535
264	IL	12	1042426
265	MI	10	1036532
266	VA	7	1036095
267	CA	30	1028940
268	MO	6	1027561
269	AL	5	1015652
270	ID	2	1011986
271	RI	2	1005984
272	MA	7	1004842
273	TX	18	1003518
274	NY	19	1002472
275	FL	14	1000259
276	CA	31	994642
277	PA	13	993726
278	OH	12	989757
279	WI	6	981349
280	TE	6	979328
281	WA	6	977588
282	NJ	9	968579
283	CA	32	962556
284	MD	6	959724
285	IL	13	955557
286	OR	4	951244
287	NC	8	951090
288	NY	20	949711
289	TX	19	947767
290	MI	11	932878

SEQ	ST	SEAT	PRIORITY
291	CA	33	932477
292	GA	8	929774
293	IA	4	929141
294	FL	15	928812
295	IN	7	927371
296	KY	5	924742
297	AZ	5	919496
298	PA	14	917285
299	OH	13	907277
300	CA	34	904220
301	NY	21	902225
302	WV	3	900812
303	TX	20	897884
304	VA	8	888081
305	IL	14	882052
306	CA	35	877625
307	MN	6	877406
308	SC	5	875927
309	FL	16	866891
310	UT	3	863882
311	MS	4	862148
312	MA	8	861293
313	NJ	10	860959
314	NY	22	859262
315	MO	7	856301
316	TX	21	852990
317	CA	36	852550
318	PA	15	851765
319	MI	12	848071
320	LA	6	847643

EXHIBIT F – Continued

1991 PRIORITY ASSIGNMENTS
ADAMS FORMULA – (N – 1)

SEQ	ST	SEAT	PRIORITY
321	OH	14	837487
322	NC	9	832204
323	CA	37	828868
324	KS	4	828533
325	CO	5	826978
326	CT	5	823917
327	NY	23	820205
328	IL	15	819049
329	WI	7	817791
330	TE	7	816107
331	WA	7	814657
332	GA	9	813552
333	FL	17	812710
334	AL	6	812522
335	TX	22	812372
336	CA	38	806466
337	MT	2	803655
338	MD	7	799770
339	PA	16	794981
340	IN	8	794890
341	NB	3	792308
342	OK	5	789401
343	AR	4	787413
344	CA	39	785243
345	NY	24	784544
346	OH	15	777666
347	MI	13	777399
348	VA	9	777071
349	TX	23	775446
350	NJ	11	774863

EXHIBIT F – Continued

1991 PRIORITY ASSIGNMENTS
ADAMS FORMULA – (N – 1)

SEQ	ST	SEAT	PRIORITY
351	CA	40	765109
352	FL	18	764904
353	IL	16	764445
354	NM	3	760890
355	MA	9	753631
356	NY	25	751854
357	CA	41	745981
358	PA	17	745294
359	TX	24	741731
360	KY	6	739794
361	NC	10	739737
362	AZ	6	735597
363	MO	8	733972
364	MN	7	731172
365	CA	42	727787
366	OH	16	725822
367	GA	10	723158
368	FL	19	722409
369	NY	26	721780
370	MI	14	717599
371	IL	17	716668
372	OR	5	713433
373	TX	25	710825
374	CA	43	710458
375	LA	7	706369
376	NJ	12	704421
377	PA	18	701454
378	WI	8	700964
379	SC	6	700741
380	SD	2	699999

EXHIBIT F – Continued

1991 PRIORITY ASSIGNMENTS
ADAMS FORMULA – (N – 1)

SEQ	ST	SEAT	PRIORITY
381	TE	8	699520
382	WA	8	698277
383	IA	5	696856
384	IN	9	695528
385	NY	27	694019
386	CA	44	693936
387	VA	10	690730
388	MD	8	685517
389	FL	20	684387
390	TX	26	682392
391	OH	17	680458
392	CA	45	678165
393	AL	7	677101
394	IL	18	674511
395	MA	10	669895
396	DE	2	668696
397	NY	28	668315
398	MI	15	666342
399	NC	11	665763
400	CA	46	663094
401	PA	19	662484
402	CO	6	661582
403	CT	6	659134
404	TX	27	656146
405	GA	11	650842
406	FL	21	650168
407	CA	47	648679
408	MS	5	646611
409	NJ	13	645720
410	NY	29	644447

SEQ	ST	SEAT	PRIORITY
411	MO	9	642226
412	ND	2	641364
413	OH	18	640431
414	IL	19	637038
415	CA	48	634878
416	TX	28	631845
417	OK	6	631521
418	PA	20	627616
419	MN	8	626718
420	NY	30	622224
421	MI	16	621919
422	VA	11	621657
423	CA	49	621651
424	KS	5	621400
425	FL	22	619208
426	IN	10	618248
427	ME	3	616612
428	KY	7	616495
429	WI	9	613343
430	AZ	7	612998
431	TE	9	612080
432	WA	9	610993
433	TX	29	609279
434	CA	50	608964
435	LA	8	605459
436	NC	12	605239
437	OH	19	604851
438	IL	20	603510
439	NV	3	603076
440	MA	11	602905

EXHIBIT F – Continued

1991 PRIORITY ASSIGNMENTS
ADAMS FORMULA – (N – 1)

SEQ	ST	SEAT	PRIORITY
441	NY	31	601484
442	WV	4	600542
443	MD	9	599828
444	CA	51	596785
445	PA	21	596236
446	NJ	14	596049
447	GA	12	591674
448	FL	23	591062
449	AR	5	590560
450	TX	30	588269
451	CA	52	585083
452	SC	7	583951
453	MI	17	583049
454	NY	32	582081
455	AL	8	580373
456	UT	4	575921
457	CA	53	573832
458	IL	21	573334
459	OH	20	573017
460	MO	10	570867
461	OR	6	570747
462	TX	31	568660
463	PA	22	567843
464	FL	24	565364
465	VA	12	565143
466	VT	2	564964
467	NY	33	563891
468	CA	54	563005
469	HI	3	557637
470	IA	6	557485

SEQ	ST	SEAT	PRIORITY
471	NH	3	556958
472	IN	11	556423
473	NC	13	554802
474	NJ	15	553474
475	CA	55	552579
476	AK	2	551947
477	CO	7	551319
478	TX	32	550316
479	CT	7	549278
480	MI	18	548752
481	MN	9	548379
482	MA	12	548096
483	NY	34	546803
484	IL	22	546032
485	WI	10	545194
486	OH	21	544366
487	TE	10	544071
488	WA	10	543105
489	CA	56	542532
490	GA	13	542368
491	PA	23	542032
492	FL	25	541807
493	MD	10	533180
494	TX	33	533119
495	CA	57	532844
496	NY	35	530721
497	LA	9	529777
498	KY	8	528424
499	NB	4	528206
500	OK	7	526267

EXHIBIT G

COMPARISON OF HILL METHOD: SQRT[n(n-1)] AND DEAN METHOD: $\frac{2(n-1)n}{(n-1)+n}$

STATE	1989 REPS	-- 1990 HILL METHOD -- REPS	CHANGE	PEOPLE /REP	- 1990 DEAN METHOD - REPS	CHANGE	PEOPLE /REP
WA	8	9	+1	543105	8	0	610993
MT	2	1	-1	803655	2	0	401828

COMPARISON OF HILL METHOD: SQRT[n(n-1)] AND ADAMS METHOD: n - 1

STATE	1989 REPS	-- 1990 HILL METHOD -- REPS	CHANGE	PEOPLE /REP	- 1990 ADAMS METHOD - REPS	CHANGE	PEOPLE /REP
CA	45	52	+7	573832	50	+5	596785
FL	19	23	+4	565364	22	+3	591062
IL	22	20	-2	573334	19	-3	603510
NY	34	31	-3	582081	30	-4	601484
NC	11	12	+1	554803	11		605239
OH	21	19	-2	573017	18	-3	604851
PA	23	21	-2	567843	20	-3	596236
TX	27	30	+3	568660	29	+2	588269
AZ	5	6	+1	612998	7	+2	525426
DE	1	1		668696	2	+1	334348
KS	5	4	-1	521400	5		497120
KY	7	6	-1	616495	7		528424
LA	8	7	-1	605459	8		529777
ME	2	2		616612	3	+1	411074
MT	2	1	-1	803655	2		401828
ND	1	1		641364	2	+1	320682
SD	1	1		699999	2	+1	350000

EXHIBIT H

| \- HILL METHOD \- | | \- DEAN METHOD \- | | \- ADAMS METHOD \- | |
STATE	PEOPLE /REP	STATE	PEOPLE /REP	STATE	PEOPLE /REP
MT	803655	SD	699999	NC	605239
SD	699999	DE	668696	OH	604851
DE	668696	ND	641364	IL	603510
ND	641364	KS	621400	NV	603076
KS	621400	ME	616612	MA	602905
ME	616612	KY	616495	NY	601484
KY	616495	AZ	612998	WV	600542
AZ	612998	WA	610993	MD	599828
LA	605459	LA	605459	CA	596785
NV	603076	NV	603076	PA	596236
MA	602905	MA	602905	NJ	596049
WV	600542	WV	600542	GA	591674
MD	599828	MD	599828	FL	591062
NJ	596049	NJ	596049	AR	590560
GA	591674	GA	591674	TX	588269
AR	590560	AR	590560	SC	583951
SC	583951	SC	583951	MI	583049
MI	583049	MI	583049	AL	580373
NY	582081	NY	582081	UT	575921
AL	580373	AL	580373	MO	570867
UT	575921	UT	575921	OR	570867
CA	573832	CA	573832	VA	565143
IL	573334	IL	573334	VT	564964
OH	573017	OH	573017	HI	557637
MO	570867	MO	570867	IA	557485
OR	570747	OR	570747	NH	556958
TX	568660	TX	568660	IN	556423
PA	567843	PA	567843	AK	551947
FL	565364	FL	565364	CO	551319
VA	565143	VA	565143	CT	549278
VT	564964	VT	564964	MN	548379

EXHIBIT H – Continued

–HILL METHOD–		–DEAN METHOD–		–ADAMS METHOD–	
STATE	PEOPLE /REP	STATE	PEOPLE /REP	STATE	PEOPLE /REP
HI	557637	HI	557637	WI	545194
IA	557485	IA	557485	TE	544071
NH	556958	NH	556958	WA	543105
IN	556423	IN	556423	LA	529777
NC	554803	NC	554802	KY	528424
AK	551947	AK	551947	NB	528206
CO	551319	CO	551319	OK	526267
CT	549278	CT	549278	AZ	525426
MN	548379	MN	548379	MS	517289
WI	545194	WI	545194	NM	507260
TE	544071	TE	544071	ID	505993
WA	543105	NB	528206	RI	502992
NB	528206	OK	526267	KS	497120
OK	526267	MS	517289	WY	455975
MS	517289	NM	507260	ME	411074
NM	507260	ID	505993	MT	401828
ID	505993	RI	502992	SD	350000
RI	502992	WY	455975	DE	334348
WY	455975	MT	401828	ND	320682

EXHIBIT I

VARIANCE AND STANDARD DEVIATION

Using Ideal District Size as Mean:

-- HILL METHOD --   -- DEAN METHOD --   -- ADAMS METHOD --

$v^2 = 2,813,456,170.14$ $v^2 = 2,329,604,538.67$ $v^2 = 5,851,343,298.73$
$v = 53,042.02$ $v = 48,265.98$ $v = 76,494.07$

v^2 = variability
v = square root of variability

Ideal District Size = 572,466 (U.S. Population ÷ 435) or (249,022,783 ÷ 435)

Using Actual District Size Mean ($\bar{X}$):

-- HILL METHOD --   -- DEAN METHOD --   -- ADAMS METHOD --

$s^2 = 2,795,841,683.56$ $s^2 = 2,323,103,847.90$ $s^2 = 4,868,505,384.22$
$s = 52,875.72$ $s = 48,198.59$ $s = 69,774.68$

$\bar{X} = 576,620.78$ $\bar{X} = 569,941.98$ $\bar{X} = 541,430.84$

s^2 = variance
s = standard deviation

RANGE

-- HILL METHOD --   -- DEAN METHOD --   -- ADAMS METHOD --

347,680   298,171   284,557

HILL AFF. EXH. I - PAGE 1

EXHIBIT J

BASIC FORMULA: The basic formula used is:

$$PRIORITY = \frac{STATE\ POPULATION}{DENOMINATOR}$$

WHERE: PRIORITY = value used to determine the state to receive the
next representative.

STATE POPULATION = population of each state as determined
by the Census Bureau for 1990

DENOMINATOR = the denominator dictated by each of three
formulae: the Hill, Adams and Dean methods

HILL METHOD (Exh. D): The formula used by the Hill method to
calculate the denominator is:

DENOMINATOR = SQRT[(NEXTREP * CURREPS)]

WHERE: * = a symbol to denote multiplication

SQRT[argument] = function used to determine the square
root of the argument

NEXTREP = the number of representatives the state in
question would have if this representative were
apportioned to it

CURREPS = the number of representatives already
apportioned to the state in question

DEAN METHOD (Exh. E): The formula used by the Dean method to
calculate the denominator is:

$$DENOMINATOR = \frac{2 * CURREPS * NEXTREP}{CURREPS + NEXTREP}$$

WHERE: NEXTREP = the number of representatives the state in
question would have if this representative were
apportioned to it

CURREPS = the number of representatives already apportioned
to the state in question

HILL AFF. EXH. J - PAGE 1

ADAMS METHOD (Exh. F): The formula used by the Adams method to calculate the denominator is:

DENOMINATOR = CURREPS

WHERE: CURREPS = the number of representatives already apportioned to the state in question

Once the data for each formula was generated, a comparison between the Hill formula and each of the other two formulae (Adams and Dean) was performed (Exh. G). The differences shown on the report were calculated by the following equation:

STATE	1989 REPS	-- 1990 METHODS OF HILL, DEAN, AND ADAMS -- REPS	CHANGE	PEOPLE /REP
ST	Y	X	d	Q

WHERE: $d = X - Y$

$$Q = \frac{\text{state population}}{X}$$

The population mean, variance and standard deviation were calculated as follows:

Initially, I used the ideal district size to determine a measure of variability and its square root for each of the three methods. The formulae used were:

$$v^2 = \sum_{i=1}^{n} (X_i - P)^2 / (n - 1)$$

$$v = \sqrt{v^2}$$

WHERE:
v^2 = variability
s = square root of variability
n = 50 (number of states)
X_i = each state's number of constituents per representative
P = ideal district size = (U.S. Population/435) or
$(249,022,783/435) = 572,466$

Finally, I calculated the population mean for each of the three methods and used these values to calculate the estimated variance and standard deviation using the following formulae:

$$s' = \sum_{i=1}^{n} (X_i - \bar{X})' / (n - 1)$$

$$\bar{X} = \sum_{i=1}^{n} X_i/n$$

$$s = \sqrt{s'}$$

WHERE: s' = variance
        s = standard deviation
        n = 50 (number of states)
        X_i = each state's number of constituents per representative

The range of the data is calculated by taking the district size of the state with the minimum number of constituents per representative from the district size of the state with the maximum number of constituents per representative.

$$RANGE = max. \ X_i - min. \ X_i$$

HILL AFF. EXH. J - PAGE 3

LAWRENCE R. ERNST DECLARATION EXHIBITS

THEORETICAL 1990 APPORTIONMENTS UNDER DIFFERENT METHODS

		EXACT Q	ADAM	HARM	EQPR	WEBS	JEFFS	HAM
1	Alabama	7.097	7	7	7	7	7	7
2	Alaska	0.964	1	1	1	1	1	1
3	Arizona	6.425	7	6	6	6	6	6
4	Arkansas	4.126	4	4	4	4	4	4
5	California	52.124	50	52	52	52	54	52
6	Colorado	5.778	6	6	6	6	6	6
7	Connecticut	5.757	6	6	6	6	6	6
8	Delaware	1.168	2	1	1	1	1	1
9	Florida	22.715	22	23	23	23	23	23
10	Georgia	11.369	11	11	11	11	11	11
11	Hawaii	1.948	2	2	2	2	2	2
12	Idaho	1.768	2	2	2	2	1	2
13	Illinois	20.030	19	20	20	20	21	20
14	Indiana	9.720	10	10	10	10	10	10
15	Iowa	4.869	5	5	5	5	5	5
16	Kansas	4.342	5	4	4	4	4	4
17	Kentucky	6.461	7	6	6	6	6	6
18	Louisiana	7.403	8	7	7	7	7	7
19	Maine	2.154	3	2	2	2	2	2
20	Maryland	8.382	8	8	8	8	8	8
21	Massachusetts	10.532	10	10	10	11	11	11
22	Michigan	16.296	16	16	16	16	17	16
23	Minnesota	7.663	8	8	8	8	8	8
24	Mississippi	4.518	5	5	5	5	4	4
25	Missouri	8.975	9	9	9	9	9	9
26	Montana	1.404	2	2	1	1	1	1
27	Nebraska	2.768	3	3	3	3	2	3
28	Nevada	2.107	2	2	2	2	2	2
29	New Hampshire	1.946	2	2	2	2	2	2
30	New Jersey	13.536	13	13	13	13	14	14
31	New Mexico	2.658	3	3	3	3	2	3
32	New York	31.521	30	31	31	31	33	31
33	North Carolina	11.630	11	12	12	12	12	12
34	North Dakota	1.120	2	1	1	1	1	1
35	Ohio	19.018	18	19	19	19	19	19

THEORETICAL 1990 APPORTIONMENTS UNDER DIFFERENT METHODS

		EXACT Q	ADAM	HARM	EQPR	WEBS	JEFFS	HAM
36	Oklahoma	5.516	6	6	6	5	5	5
37	Oregon	4.985	5	5	5	5	5	5
38	Pennsylvania	20.830	20	21	21	21	21	21
39	Rhode Island	1.757	2	2	2	2	1	2
40	South Carolina	6.124	6	6	6	6	6	6
41	South Dakota	1.223	2	1	1	1	1	1
42	Tennessee	8.554	9	9	9	9	8	9
43	Texas	29.801	29	30	30	30	31	31
44	Utah	3.018	3	3	3	3	3	3
45	Vermont	0.987	1	1	1	1	1	1
46	Virginia	10.859	11	11	11	11	11	11
47	Washington	8.538	9	8	9	9	8	9
48	West Virginia	3.147	3	3	3	3	3	3
49	Wisconsin	8.571	9	9	9	9	8	9
50	Wyoming	0.797	1	1	1	1	1	1

EXACT Q = EXACT QUOTA (The integer and fraction of seats due a state given its population)

ADAM = ADAMS (SMALLEST DIVISORS) METHOD – Never used

HARM = DEAN (HARMONIC MEAN) METHOD – Never used

EQPR = EQUAL PROPORTIONS (HILL) METHOD – Used 1940-1990

WEBS = WEBSTER (MAJOR FRACTIONS) METHOD – Used 1840, 1880-1910, 1930

JEFF = JEFFERSON (GREATEST DIVISORS) METHOD – Used 1790-1830

HAM = HAMILTON/VINTON METHOD – Used 1850-1870

EXHIBIT C

POSSIBLE APPORTIONMENTS FOR MONTANA
UNDER VARIOUS METHODS

	EXACT Q	ADAM	HARM	EQPR	WEBS	JEFFS	HAM
1960	1.644	2	2	2	2	1	2
1970	1.496	2	2	2	1	1	1
1980	1.515	2	2	2	2	1	1
1990	1.404	2	2	1	1	1	1

EXACT Q = EXACT QUOTA (The integer and fraction of seats due a state given its population)

ADAM = ADAMS (SMALLEST DIVISORS) METHOD — Never used

HARM = DEAN (HARMONIC MEAN) METHOD — Never used

EQPR = EQUAL PROPORTIONS (HILL) METHOD — Used 1940-1990

WEBS = WEBSTER (MAJOR FRACTIONS) METHOD — Used 1840, 1880-1910, 1930

JEFF = JEFFERSON (GREATEST DIVISORS) METHOD — Used 1790-1830

HAM = HAMILTON/VINTON METHOD — Used 1850-1870